



Attorney Docket No. 069974/0140

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S): Masahiro IWADARE
Title: FAST CALCULATION APPARATUS
FOR CARRYING OUT A FORWARD
AND AN INVERSE TRANSFORM
Application Number: 10/642,968
Filing Date 08/19/2003
Examiner: C. Ngo
Art Unit: 2124

SUPPLEMENTAL AMENDMENT

Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Please amend the reissue application claims as follows:

IN THE CLAIMS:

Please amend the claims as follows:

44. (New) An apparatus for carrying out an inverse transform comprising:
an input signal $y(m,k)$ having M samples, M being an integer;
transform carrying out means for carrying out a linear inverse transform on said
input signal $y(m,k)$ and for outputting an inverse transformed signal $x_t(m,n)$
representative of a result of said linear inverse transform, said linear inverse transform
 $x_t(m,n)$ being determined using the sum:

$$\sum_{k=0}^{M-1} y(m,k) \cos[2\pi(n+n_0)(k+1/2)/N]$$

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where m represents a block number, n represents a sample number, N represents a block length and k is an integer between 0 and $M-1$;

a multiplier connected to said transform carrying out means, said multiplier multiplying a predetermined inverse transform window function and said inverse transformed signal $x_t(m,n)$ to produce a product signal having N samples, N being an integer different from M ;

wherein said transform carrying out means comprises:

a first processing device which receives said input signal $y(m,k)$ and outputs a processed signal, said processed signal comprising a product signal formed by multiplying said input signal $y(m,k)$ by a predetermined factor;

internal transform carrying out means connected to said first processing device for carrying out an inverse fast Fourier transform on said processed signal and for outputting as a result of said inverse fast Fourier transform an internal signal; and

a second processing device connected to said internal transform carrying out means to receive said internal signal and output as a result of processing said internal signal said inverse transformed signal.

45. (New) The apparatus as claimed in claim 44, wherein M is smaller than N .

46. (New) The apparatus as claimed in claim 44, wherein M is equal to $N/2$.